

## CLAIMS

1. A multi-roll calender and a fibrous web traversing said multi-roll calender, which multi-roll calender is an on- or off-line multi-roll calender comprising separate first and second sets of rolls, each set of rolls comprising rigid-shell press rolls and resilient-shell backing rolls for the press rolls, placed alternately one after the other, successive nips being situated against each other, as well as a reversing or guide member guiding the run of the fibrous web, wherein in the on- or off-line multi-roll calender comprising two sets of rolls the fibrous web extends past an intermediate moistening means after a first set of rolls, and that in the calender:

10 a pre-moistening means immediately precedes the first set of rolls, and wherein the fibrous web enters the first set of rolls having a moisture content which is higher than the fibrous web moisture content immediately before the pre-moistening means;

the fibrous web has a moisture content which is lower immediately after the first set of rolls;

15 after the first set of rolls and the intermediate moistening means, the fibrous web has a moisture content which is higher than the moisture content of the fibrous web immediately before the intermediate moistening means; and

20 the fibrous web after the second set of rolls has a moisture level lower than the moisture level of the fibrous web before the second set of rolls.

2. (currently amended) The multi-roll calender of claim 1, wherein the fibrous web after the pre-moistening means has a moisture level of 3–10 %, and the fibrous web after the first set of rolls has a moisture level of 1–6 %, and after the intermediate moistening means the fibrous web has a moisture level of 6–14 %, and after the second set of rolls the fibrous web has a moisture level of 4.5–7.5 %.

3. The multi-roll calender of claim 2 further comprising a means for overdrying the fibrous web before the pre-moistening unit preceding the first set of rolls, such that the moisture content of the fibrous web is lower than the equilibrium moisture content dependent on the ambient conditions.

5 4. The multi-roll calender of claim 1 wherein the web has a first side and a second side, and wherein after the intermediate moistening means the fibrous web is of higher moisture on the first side.

5. The multi-roll calender of claim 4 wherein after the intermediate moistening means the fibrous web is of higher moisture on the second side.

10 6. A calender apparatus for control of the moisture gradient of a paper or board web, comprising:  
means for pre-moistening the web for raising the moisture content of the web passing from a drying process;  
a first set of rolls immediately following the means for pre-moistening the web,  
15 the first set of rolls comprising a plurality of rigid-shell press rolls and resilient-shell backing rolls for the press rolls, placed alternately one after the other, successive nips being situated against each other, as well as a reversing or guide member guiding the run of the fibrous web, the first set of rolls acting to dry the web passing therethrough;  
20 an intermediate moistening unit positioned to receive the web from the first set of rolls, and to raise the moisture content of the web; and  
a second set of rolls comprising a plurality of rigid-shell press rolls and resilient-shell backing rolls for the press rolls, placed alternately one after the other, successive nips being situated against each other, as  
25 well as a reversing or guide member guiding the run of the fibrous web, the second set of rolls acting to dry the web passing therethrough to a desired final moisture level.